

IN THE CLAIMS:

The following is a complete listing of claims in this application.

1. (currently amended) Apparatus for generating ions in a gaseous medium, ~~the apparatus being characterized in that it comprises~~ comprising:

- ~~one or more needles at least one needle~~ (40, 85, 86, 87), each said needle presenting a shank (40.1) and an emitter end (40.2);
- a sheath (42) of composite material comprising a glass fiber reinforced unsaturated polyester surrounding the shank (40.1) of each needle, said composite material having a resistivity of 10^4 to 10^{12} $\Omega.m$; and
- means (44, 46, 70, 72, 74, 76, 78, 80) for applying a voltage between two portions of the shank of each needle.

2. (original) Apparatus according to claim 1, in which the sheath (42) is of cylindrical outside shape.

3. (previously presented) Apparatus according to claim 1, in which the one or more needles are made of a material selected from the group consisting of: titanium, platinum, a compound of titanium and platinum, silver, stainless steel, brass, nickel, and an alloy of these materials.

4. (currently amended) Apparatus for generating ions in a gaseous medium, ~~the apparatus being characterized in that it comprises~~ comprising:

- ~~one or more needles at least one needle~~ (40, 85, 86, 87), each said needle having a shank (40.1) and an emitter

end (40.2), each needle being made of a material selected from the group consisting of titanium, platinum, and a compound of titanium and platinum;

- a sheath (42) of composite material comprising glass fiber reinforced unsaturated polyester which surrounds the shank (40.1) of each needle; and

- means (44, 46, 70, 72, 74, 76, 78, 80) for applying a voltage between two portions of the shank of each needle.

5. (previously presented) Apparatus according to claim 1, in which each emitter end (40.2) is covered in a film of gold.

6. (previously presented) Apparatus according to claim 1, in which the composite material has a glass content lying in the range 50% to 90% by weight relative to the total weight of the material.

7. (previously presented) Apparatus according to claim 1, in which the composite material also includes mica.

8. (previously presented) Apparatus according to claim 1, in which each needle (40) is held firmly in the sheath (42) which surrounds it without any possibility of rubbing or displacement.

9. (previously presented) Apparatus according to claim 1, in which the means for applying a voltage between two portions of the shank of each needle comprise first and second plates (44, 46) situated at two different heights along each sheath of composite material, and means (70, 72, 74, 76, 78, 80) for applying a high voltage between said two plates.

10. (currently amended) Apparatus according to claim 9, in which one of the two plates (44) forms a support for

each needle (40) which is held firmly without ~~any possibility~~ of rubbing.

11. (original) Apparatus according to claim 10, in which one of the two plates is provided with an integrated high voltage source (70, 72, 74, 76, 78, 80).

12. (original) Apparatus according to claim 11, in which the integrated high voltage source has means for producing a first voltage (V1), and means for multiplying said first voltage so as to obtain the desired high voltage (V2) .

13. (previously presented) Apparatus according to claim 11, in which the high voltage source is made using surface mount components (SMCs).

14. (previously presented) Apparatus according to claim 1, having a plurality of needles, each needle being surrounded by a sheath, the sheaths being interconnected in pairs.

15. (original) Apparatus according to claim 14, in which the sheaths are coupled together in pairs by means of webs (60) of material identical to the material of the sheaths.

16. (original) Apparatus according to claim 15, in which the two sheaths and the plate of a pair are formed as a single unit.

17. (previously presented) Apparatus according to claim 1, in which the apparatus is incorporated in a housing (51) made of plastics material.

18. (original) Apparatus according to claim 17, in which the plastics material has all traces of metal removed therefrom.

19. (currently amended) Apparatus according to ~~claim~~
17 claim 4, in which the plastics material has resistivity
lying in the range $10^4 \Omega$ to $10^{12} \Omega$ m.

20. (previously presented) Apparatus according to
claim 17, in which the inside of the housing is treated with
antistatic paint.

21. (previously presented) Apparatus according to
claim 17, in which the material constituting the housing is
treated with additives implanting antistatic properties
thereto.

22. (previously presented) Apparatus according to
claim 17, in which the housing comprises two shells with screw
wells (56).

23. (original) Apparatus according to claim 22,
further including means for closing the screw wells (56) after
the two shells have been assembled together.

24. (previously presented) Apparatus according to
claim 1, further including regulator means (82, 94) for
regulating the voltage applied between the two portions of the
shank of each needle.

25. (original) Apparatus according to claim 24, in
which the voltage regulator means comprise means (82) for
measuring the quantity of ions produced by the apparatus,
means (94) for comparing said quantity of ions produced with
an ideal quantity of ions required, and means for varying the
applied voltage as a function of the result of the comparison
between the quantity of ions produced and the quantity of ions
required.

26. (original) Apparatus according to claim 25, in
which the ideal quantity of ions required is determined on the

basis of a corrected volume which takes account of the real volume of the premises in which the ion generator apparatus is installed, and also of the content of the premises and/or its surroundings.

27. (previously presented) Apparatus according to claim 24, in which the means for varying the applied voltage are automatic means or manual means.

28. (previously presented) Apparatus according to claim 25, including an ion detector, itself comprising:

- means (112) for sensing ions or a quantity of ions in an atmosphere;

- indicator means (114, 122) for indicating the presence of ions; and

- switch means (100-110) for switching the indicator means as a function of the quantity of ions sensed by the ion sensor means (112).

29. (original) Apparatus according to claim 28, in which the switch means (100-110) comprise a transistor (104) biased by a voltage source when switching occurs.

Claims 30-36 (canceled).

37. (currently amended) A method of vacuum-packaging foodstuffs, the method comprising the following steps of:

- producing one or more negative oxygen ion fluxes by means of apparatus according to claim 1;

- subjecting the foodstuffs for packaging to said ion flux; and

- vacuum-packaging the foodstuffs.

38. (previously presented) A method of storing foodstuffs in which the foodstuffs are placed in premises fitted with ionizer apparatus according to claim 1, and in

which a flux of negative ions is produced by means of said ionizer apparatus.

39. (original) A method of storing foodstuffs according to claim 38, in which the foodstuffs are meat or fish or vegetables.

40. (currently amended) A method of treating the atmosphere in premises, ~~in which use is made of~~ comprising generating said ions with an apparatus according to claim 1.

41. (original) A method according to claim 40, in which the premises is a gray or white airlock, or a clean room, or a computer room, or a room fitted with computer or electronic equipment, or a hospital ward or theatre.

42. (original) A method according to claim 40, in which the premises is a unit in which animals are reared.

43. (original) A method according to claim 40, in which the premises is a zone or workshop for producing food.

44. (new) Apparatus for generating ions in a gaseous medium, comprising:

- at least one needle (40, 85, 86, 87), each said needle presenting a shank (40.1) and an emitter end (40.2);
- a sheath (42) of composite material comprising a glass fiber reinforced unsaturated polyester surrounding the shank (40.1) of each needle, said composite material having a resistivity of 10^4 to 10^{12} $\Omega \cdot m$, said sheath being of cylindrical outside shape without conical structure; and
- means (44, 46, 70, 72, 74, 76, 78, 80) for applying a voltage between two portions of the shank of each needle.

45. (new) Apparatus for generating ions in a gaseous medium, comprising:

- at least one needle (40, 85, 86, 87), each said needle having a shank (40.1) and an emitter end (40.2), each needle being made of a material selected from the group consisting of titanium, platinum, a compound of titanium and platinum, silver, stainless steel, brass nickel, and an alloy thereof;

- a sheath (42) of composite material having a resistivity of 10^4 to 10^{12} $\Omega \cdot m$ comprising glass fiber reinforced unsaturated polyester which surrounds the shank (40.1) of each needle, the composite material having a glass content of 50 to 90% by weight, and the sheath being of cylindrical outside shape without conical structure; and

- means (44, 46, 70, 72, 74, 76, 78, 80) for applying a voltage between two portions of the shank of each needle.